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Bovine Tuberculosis and the Public Milk Supply.*

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Mr. President and Gentlemen,—

The placing of a paper before a meeting of the Midland Counties Division by a comparatively new member is an event not lightly to be undertaken. I do so with a certain amount of diffidence, moreover, as it is extremely difficult to find anything new to write about, at any rate, anything outside what one can learn by applying oneself to modern veterinary literature, unless one be a specialist in some particular branch of the veterinary profession.

As I play a small part in helping to maintain Birmingham's milk supply as free from tuberculosis as possible, and as the new Milk and Dairies Bill and the control of tuberculosis is much in the public eye at present, I thought that the subject of Bovine Tuberculosis and the Public Milk Supply was one eminently fitted for discussion.

I present this paper more as a seeker after knowledge than as a propounder of new truths, and with the hope that my remarks may give rise to a discussion which may give some of us, at least, a few new points over which to ponder.

Tuberculosis in cattle is one of the oldest recorded diseases, but not until the year 1846 was the disease thought to have any relationship with phthisis in man. For many years it was assumed that tuberculosis was always caused by *inhaling* the specific organism, but it is now realised by most authorities that tuberculosis in man may, in many instances, be due to bacilli of bovine origin ingested with food, particularly milk. Adults may not be so prone to contract tuberculosis, as their power of resistance is greater and the food in which the bacilli may be present is usually cooked, but in the case of infants, where the great bulk of their food during the first year of their lives is milk, the case is entirely different. I have read that 95 per cent. of infantile tuberculosis is bovine in origin, and if that be true, for what a wastage in human lives is bovine tuberculosis responsible!

Behring believes that "most pulmonary tuberculosis is contracted in childhood through drinking tuberculous milk, though the disease may remain dormant for years, only manifesting itself when the individual becomes run down in health or from some other cause."

Macawen says: "It is striking that out of the 60,000 persons who die annually from tuberculosis in this country, 11,000 should be children under five years of age, *i.e.*, 11,000 deaths in that section of the community which depends mostly upon milk for its nourishment." Now, can anything be done to remedy this heavy death roll? Obviously the surest way would be to eliminate tuberculous cows from the dairy herds. That, of course, is impossible for economic reasons alone, but surely the quantity of tubercle-infected milk could be reduced if we attended to methods which would control and prevent the spread of the disease and promote the identification and destruction of animals actually yielding infected milk.

There are several ways by which the danger of drinking tubercle-infected milk may be minimised:—

1. Attention to the housing of the cows and young stock.
2. Frequent and thorough physical examination of all dairy cows.
3. The tuberculin test.
4. Education of the public as to the danger of the presence of *B. tuberculosis* in milk.
5. Proper handling of milk in towns.
6. Legislation.

1. *Attention to Housing of Dairy Cows and Stock.*—Far too little attention is paid at the present time to the proper housing of dairy cows and stock.

There is little need for wonder that the percentage of tuberculous dairy cows is so high when one thinks of all the dark, insanitary, ill ventilated sheds in which dairy cows and their stock are housed. These warm, dark, badly-ventilated and improperly-cleaned byres present just the requisite conditions necessary for the propagation of the tubercle bacillus. The cleaning of the byres is very often carried out in a very perfunctory manner, and the dung is often merely tipped outside the door, with the result that it is an utter impossibility for anyone to expect to get even reasonably clean milk, let alone milk that is tubercle-free.

It is in these badly-designed, insanitary sheds that tuberculosis spreads unhindered. Many cow-keepers object to any form of ventilation; in their opinion, ventilation is the cause of all the ills the cow is heir

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to, and they have the erroneous belief that a warm, stuffy shed makes more milk than an airy one.

Recent experiments have exploded this theory, and they have proved that animals in a well-ventilated shed will produce just as much, if not more, milk than in a stuffy one, with the addition of having a hardier and healthier race of cows.

If dairy cows were kept out in the fields all winter where at all possible, as well as in the summer, and when this is impossible the cowshed were so constructed that the conditions of life under which the cows pass the winter are as natural as possible, we should have advanced a long way in our effort to eradicate tuberculosis. It is absolutely useless to think of "clearing" a herd if the sheds are not well ventilated and sanitary.

We had a very good illustration some two years ago, when testing a herd of British Friesians for the first time, of what an open life does for a herd. Seventy animals were tested; there were only five reactors, these were cleared out and since then we have had none. This herd is not situated in a particularly mild climate, and yet the cows and young stock are in the open practically all the year round; the cowsheds are entirely open in front and yet there are several cows giving over 1,000 gallons each per lactation period.

Another point that is very often overlooked is that one must not merely attend to the welfare of the dairy cows and their housing: the young stock must also be looked after.

Too many people seem to think that any old tumble-down shed will do for the calves and heifers, forgetting that they are the future milk producers. There are four essential features which should be present in every shed where milk is produced, viz.:—(1) An impervious floor; (2) A sufficient water supply for flushing the sheds; (3) Proper drainage; (4) Sufficient light and ventilation.

Frequent and thorough physical examination of all dairy cows, with the removal of all animals showing evidence of disease, would also help to lessen the number of infected milk producers.

Although the percentage of infected cows would be small, nevertheless it is of the utmost importance to the producer and the consumer, as it would include a large proportion of the animals that are giving off tubercle bacilli.

The value of physical examination is to protect the herd from its own infection and help to eliminate the more dangerous disseminators of the disease. Physical examination is, however, very strictly limited; it includes the detection of lesions in the lungs, mammary glands and other organs, but, although a practitioner may be certain in his own mind that a cow is tuberculous, it is not possible to say that enlarged glands and dullness on percussion are due to tuberculosis. It is also not always necessary for the udder of a cow to show evidence of tuberculosis before tubercle bacilli can be demonstrated in the milk, especially if the cow be suffering from generalised tuberculosis. It is sometimes extremely difficult to pick out a tubercle-eliminating cow from a herd even when one is certain there is one present, as the lesions to be found are so many and varied. Sometimes there is only a slight enlargement and thickening of the gland, at others small nodules in the gland are felt, or the supramammary glands are enlarged—but it has been found that too great reliance should not be placed on the last condition, as it is sometimes present in cows which are not tuberculous at all.

It is not impossible that tubercle bacilli may get in the milk without passing through the teats at all. It has been proved that the saliva and bronchial mucous of a tuberculous cow contains abundant tubercle bacilli, and by licking the udder it is possible to convey tubercle bacilli to its exterior surface; the excreta are also infective when lesions are located in the alimentary canal or reproductive organs, and it is then possible to get contamination of the milk indirectly.

Therefore, although physical examination would undoubtedly do much to reduce the most dangerous disseminators of the disease, it does not rid us of the possibility of further cows developing tuberculous mastitis at any moment in a tuberculous herd, for a tuberculous cow is always a source of danger. That brings us to the tuberculin test, which is the only sure method we have at present of determining whether a cow is tuberculous or not.

The tuberculin test. The tuberculin test is the quickest and surest method we have to-day for diagnosing tuberculosis. Some authorities, outside the Veterinary Profession, have raised doubts as to its efficiency; there is some excuse for these doubts, too, which is unfortunate for the Veterinary Profession, and it is for us to correct these erroneous ideas and apply a remedy if required.

Where do these doubts originate? Undoubtedly, when there have been unsatisfactory results, when the test has been applied for the purpose of clearing a herd, or, more commonly, when a new animal is tested after admission to a herd and it is found to react, though it has been sold with a tubercle-free certificate. It cannot be denied that some very curious results are seen when testing cattle, and it is not to be wondered at if cattle breeders are somewhat sceptical of the value of the test.

It is not the tuberculin test that is at fault, nor is it the method of administration in most cases, though I am afraid the methods of some veterinary practitioners are not beyond criticism. They are not willingly careless, but somewhat pig-headed and do not think certain seemingly trivial things are necessary, or they are too busy to take the temperature at the right time, or leave it to someone else to take it for them.

What must not be lost sight of, however, is that the tuberculin test, like all other tests, is not infallible. Tuberculin does not give a reaction (1) when the disease is in the period of incubation, (2) when it is arrested or encapsuled, or (3) when it is very far advanced.

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These three points must be borne in mind when testing a herd for the first time, and should be pointed out to the owner, more especially if the animal is found to be extensively affected. A considerable number of animals may be in any of these three stages and show reactions at the following two or three tests, and subsequent early tests must be made, for recently-infected and latent cases may become active at any time.

Carelessly made *post-mortems* are also prolific sources for adverse criticism. The *post-mortems* on reactors are far too often left in the hands of butchers or knackers, and, when no lesions are seen on the lungs or other organs, the farmer is told the cow was not tuberculous and so the disbelief grows.

In my experience, *post-mortems* on reactors have to be made very carefully indeed, and although no evidence of disease may be seen at first, if a careful search be made one will always find a tuberculous lesion in a reactor. Very often the lesions are extremely small, but that only goes to prove how efficacious is the test.

In four *post-mortems* I made recently on reactors, the following were the lesions found :—

No. 1. Caseating tuberculous lesion in one mediastinal lymph gland.

No. 2. Tuberculous lesion in sublingual and submaxillary gland on *one side* of the head only.

No. 3. One supra-mammary gland tuberculous and one small area in the apex of the right lung.

No. 4. Tuberculous lesion in one lymph gland on the liver.

No other macroscopic lesions could be found after a long and careful search ; what would the verdict have been if the *post-mortem* had been left to a butcher or to someone who had not a thorough knowledge of the location of the lymph glands ?

It is in our own hands to remedy all the foregoing causes of failure, by testing a new herd frequently, instructing the owner, performing our own *post-mortems* on reactors where possible, and applying the test carefully and methodically. But there is still a very stiff fence for us to cross before we can place complete faith in the test—that is, the unrestricted sale of tuberculin.

We come across very little doping of cows with tuberculin amongst the milk-producing herds, but if, and when, tubercle-free herds become more numerous, we will undoubtedly come up against this method of nullifying the test at every turn.

I shall return to the " doping " of cows later on, but will confine myself at present to some points on the application of the test.

There is considerable difference of opinion as to the best method of applying the tuberculin. The different methods are familiar to us all, the best known ones are the subcutaneous, ophthalmic and intradermal.

At the present time the method upon which we place most reliance in this country is the subcutaneous, with the ophthalmic second. It may be that my technique is at fault in applying the ophthalmic and intradermal, or that the tuberculin is not quite suitable, but I have had no very constant results with these two. Apart from the reliability of the subcutaneous method it is, in my opinion, the surest method of applying the tuberculin. When one thinks of the dark byres in which one has to operate, lit by the very ineffective rays of a smoking lamp or candle, the application of the ophthalmic or intradermal devolves into the " hit or miss " variety, even if one be operating on an old cow and not a young unbroken bull or heifer.

With the subcutaneous method, however, you can at worst *feel* what you are doing, and when the needle is inserted you know the dose has gone where it was intended.

The surest method of applying the test is to apply two methods simultaneously, one of them always being the subcutaneous.

The ophthalmic and intradermal should only be used as discriminating reactions, for, as I have remarked previously, tuberculin has its limitations.

A positive reaction to either of the tests indicates almost certainly that tuberculosis is present, but a negative result when the tests are applied separately does not tell us unquestionably that the animal is not tuberculous. I have seen many undoubted positive reactions to the ophthalmic method, but it is in the milder reactions that this method is at fault, and the conclusions as to whether there is a reaction or not depend on the opinion of the observer.

There has recently been some correspondence in the veterinary periodicals relating to the hours at which the post-injection temperatures should be taken. The Ministry of Agriculture stipulate that they shall be taken at the 9th, 12th, 15th and 18th hours, and later if necessary. Some people say the 9th hour temperature is unnecessary, maintaining that if the temperature is up then it will still be up at the 12th. I am in the fortunate position of being able to dig into the records of testing cows for the City of Birmingham for the last 14 years, and I got the following results :—

Out of 1,500 reactors 42 per cent. showed a definite reaction at the 9th hour, viz., a temperature above 104° F. ; 9·9 per cent. showed the highest temperature at the 9th hour, average temperature being 105·6° F. ; 1·7 per cent. showed no definite reaction after the 9th hour.

Some of that 1·7 per cent. showed a rise above normal at the 12th hour, but they would have been left as doubtful instead of reactors if the 9th hour temperature had not been taken.

Villar does not think the 9th hour is necessary ; he says, " Ordinarily a temperature which, though risen, has dropped by the 12th hour, would not be a positive or even a suspicious reaction."

I do not agree with that statement, for I cannot see why we should not have evidence of a reactor at the 9th hour just as easily at as the 12th, especially when we find nearly 10 per cent. showing an average temperature of 105·6° F. Surely that is definite enough, especially when we find the chart shows a gradual fall after the 9th hour. I do not think

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taking the temperature at an earlier hour would add much to the accuracy of the test.

If we wish to popularise the test, it would be better to leave very early temperature-taking out. It would be all right if one were dealing with an enthusiast, but if a farmer had his herd tested "just to see what it was like," I do not think taking the temperature six or seven times would make him feel like going on with it.

It is a different matter when one is trying to cope with the fraudulent designs of dealers and owners, and if one is suspicious that all is not as it should be, it is recommended that a dose of 10 or 15 c.c. should be given and the temperature taken from the 2nd hour and every two hours up to the 15th; but even if one does so, and the animal does not react, is it certain a true decision can be given?

I should like to give you the result of an experiment on the use of tuberculin on doped animals. This experiment was carried out only two weeks ago.

Some weeks ago several pedigree bulls were purchased for export, a tubercle-free certificate accompanying these animals, but the purchaser, wise to all the tricks of the trade, had them re-tested. Each bull received 20 c.c. dose of tuberculin, and two showed a decided reaction at the 18th hour after injection. Two days after the test the reacting bulls were given 40 c.c. tuberculin each, and the temperature was subsequently taken every hour from the first after inoculation. In bull No. 1 the top of the temperature curve (104·2° F.) was reached at the 5th hour; in bull No. 2 the highest temperature (104° F.) was reached at the 6th hour. Both bulls had a normal temperature at the 9th hour. Two days later a second dose of 40 c.c. was given, and in No. 1 the top of the curve (103·5° F.) was reached at the 3rd hour, and in No. 2 (103·2° F.) at the 4th hour. Both bulls' temperatures were normal at the 9th hour. At the next injection of 40 c.c., two days later, no reaction was shown at any hour.

This experiment is interesting as it shows that enormous doses of tuberculin can be given with impunity, as neither animal showed any inconvenience beyond the fleeting rise in temperature. It also shows that an animal can be so saturated with tuberculin that no reaction will be given no matter when the temperature is taken. These animals were also tested by the ophthalmic method, first in one eye and then in the other, but no reaction was observed.

The results may have been satisfactory in the early days of the tuberculin test, but I am afraid the dealers who dope animals know as much about the test as we do now, and if they wish to defeat the test they can do so.

There are various methods used by dealers to nullify the test, the most certain and almost the only one employed now being the injection of large doses of tuberculin until the animal ceases to react.

Some breeders would like us to believe that they inject the tuberculin into calves to render them immune from tuberculosis, and it is done once a month as a matter of routine by many. There may be something in the idea, but they also know it is a prophylactic against the test and they succeed in defeating it—that is the primary object. If an animal gets a dose of 10 or 15 c.c. per month from the time it is a few weeks old, no amount of temperature taking after a 15 c.c. dose of tuberculin would demonstrate whether we had a reactor or not. In the same way, large animals are dosed for the test. Enormous doses are given until the animal is fairly saturated with tuberculin, and one would have to wait several months before a reaction could be expected, and even if we did get one, would it be definite?

Other and cruder methods have been adopted in the past to trap the unwary. There is the injection of cold brine per rectum half-an-hour before the veterinary surgeon is expected; this method has, however, the disadvantage of sometimes causing a markedly subnormal temperature. Large draughts of salt and water have also been given by the mouth.

Another method was the administration of huge doses of powerful febrifuges. Here is a prescription

BULL No. 1.

	Dose.	Initial Temperature.	9th hr.	12th	15th	18th	21st	24th
First Test ...	20 c.c.	102° F.	102	102·5	103·5	105·2	104	102·5

	Dose.	Initial Temperature.	1st hr.	2nd	3rd	4th	5th	6th	7th	8th	9th
Two days later...	40 c.c.	101·8°F.	101·8	102·5	103	103·5	104·2	103	103	102·5	102
,, ,, ...	40 c.c.	102° F.	102·8	103·1	103·5	103	102·8	102·3	102·1	102	102

BULL No. 2.

	Dose.	Initial Temperature.	9th hr.	12th	15th	18th	21st	24th
First Test ...	20 c.c.	101·8° F.	101·8	102·6	104	105·2	105	104·5

	Dose.	Initial Temperature.	1st hr.	2nd	3rd	4th	5th	6th	7th	8th	9th
Two days later...	40 c.c.	101·5°F.	101·8	101·5	102	102·5	103	104	103	102·5	102
,, ,, ...	40 c.c.	101·8°F.	102	102·5	102·8	103·5	103	102·5	102·3	102	102·1

of one of them: Antifebrine, ʒiv., phenacetine, ʒii., caffein citrate, ʒii., antipyrine, ʒii., soda salicylas, ʒii.—surely a combination strong enough to counteract a dose of tuberculin. Another animal, exactly similar, was also sometimes substituted for the one injected, before post-injection temperatures were taken.

As I said before, we do not come up against the doping so much in the dairy herds at present; it is found more in the export of pure bred cattle, but if the production of Grade A Certified Milk becomes popular, the same thing may possibly happen.

Even if the Government takes the matter up and allows one or two approved laboratories to supply only veterinary surgeons and medical men with tuberculin, I do not think it will end the doping of cattle. Almost every country in the world makes tuberculin, and, as long as our breeders are willing to pay a fancy price for the "dope," it will be as difficult to keep tuberculin out of this country as it is to keep intoxicating liquor out of America.

What we want is a new and fool-proof test, or method of testing, which will defeat even the most expert doper. That, surely, is not beyond our veterinary scientists. Even if we do find a dope-proof test a great deal will have to be done before the eradication of tuberculosis from our dairy and pedigree herds can be seriously attempted.

First of all, the public will have to be educated through the newspapers, agricultural papers and by lectures, on the nature of tuberculosis. They must be made to realise the dangers they undergo when drinking impure milk. Many people do not understand what tuberculosis is, or what it is caused by. They know there is such a disease as "consumption" and that it affects the lungs, and there their knowledge stops. If the public fully realised the cause of tuberculosis I am sure there would soon be a greater demand for Grade A milk than there is at present. If a great demand were created, I am sure the dairyman would soon see that there was a supply to meet it, but until there is such a demand, there is no encouragement for the cowkeeper to go to all the trouble and expense of "clearing" his herd and get no more for his milk than his neighbour who does nothing.

Owners must be taught to realise the nature of the disease, its disastrous effects on a herd if allowed to continue and the benefits to be derived if the herd be "free." They should also be prevailed upon to rear more calves and buy fewer milch cows.

The problem of the control of bovine tuberculosis is somewhat complicated, as the affected animals possess a greater or less intrinsic value.

The first principle is segregation, and its application ought not to be difficult, if an equitable and just disposal of the reacting animals be provided. When one is dealing with pedigree herds, the economic problem becomes very acute, for, although a pure-bred cow may prove tuberculous, she still retains her value on account of her ability to breed. The cow can, however, be segregated and her offspring procured free from tuberculosis by removing them from the dam at birth and feeding them on milk which is obtained from tubercle-free cows or which has been pasteurised.

The present requirements for the production of Grade A milk are very admirable in theory, but to fulfil them all when clearing a badly-infected herd would be a lengthy and expensive process. To do so, one must have no reactors on the farm, and to reach that admirable stage in a short time, one would require three things at least, plenty of determination, plenty of money, and more than one farm.

Some system of segregation will have to be adopted before there can be any determined attempt at the formation of tubercle-free herds. The two best known systems are Bang's and Ostertag's. I do not intend to give a lengthy exposition of these methods, as I have no doubt they are familiar to you all; they are both good, and excellent results have been obtained when adopted.

Whatever the system adopted, a considerable length of time and care is required to create a herd free from tuberculosis, as it is difficult to keep the reactors and non-reactors separate and also obtain an adequate supply of pure or pasteurised milk for the calves. In spite of that, however, segregation is a system that will appeal to the breeder more than the disposal of all reactors, as is at present required.

Some system of compensation, for a time at least, would also have to be adopted. No farmer can afford to become a philanthropist and destroy good milkers with the risk of getting nothing for them. Even though the compensation were on a generous scale, it would only amount to a tithe of what it costs to run all the tuberculosis sanitoria in the country.

Whether we have more comprehensive laws on the subject of bovine tuberculosis passed this year or years hence, I do think we should have some legislation at once, to enforce the disposal of all clinically-affected cows, more especially when there is certain evidence of tuberculosis of the udder. It is perfectly extraordinary, in the light of our present-day knowledge, that we cannot enforce the destruction of a cow when tubercle bacilli have been demonstrated in the milk. Does it not seem futile to pass Milk Bills for several grades of milk when the great bulk of the milk consumers are entirely unconcerned as to whether their milk is graded or not? They cannot *see* the difference, they cannot taste any difference, so they do not understand why they should pay more for what seems to be the same article—so long as the fluid they buy gets the name of milk and is white, the majority are quite contented.

We shall have to concentrate on giving information to the public as to *why* they should drink Grade A milk. Create a demand for it, and then show the farmer the easiest and least expensive way whereby he may, in a short time, produce the required grade.

When there is a demand for pure milk, the suppression of tuberculosis in our dairy herds will become voluntary, and we will get better and quicker results

than if compulsory measures are forced upon unwilling farmers. It is for us to do our part in the education of the public and we should do all in our power to become thoroughly conversant with the tuberculosis question. We should explain the tuberculin test at every opportunity and rise up in its defence when it is misrepresented.

The veterinarian is the one who should know most about bovine tuberculosis and, in my opinion, he is the only person who should apply the test, examine cows, and carry out the various details, when it comes to giving advice regarding the clearing of a herd.

Many Medical Officers of Health seem to think that anyone can apply the tuberculin test, and that anyone can diagnose clinical tuberculosis, that, in fact, there is no necessity for veterinary surgeons at all when dealing with this disease; a layman is just as good, in their opinion.

Something may be done some day. I hope that day is not far distant, and we must see to it that we are ready and able to show the public and the medical authorities that we do know something about our own job. (Applause.)

Discussion.

A discussion on the paper was initiated by Mr. F. Chambers, who spoke of the difficulty of detecting *post-mortem* symptoms of tuberculosis in certain animals that had reacted to the test. He gave as an instance of this a bull costing a thousand guineas, that was sent to South Africa. It gave a wonderful reaction and was eventually killed, but he could find no visible trace of tuberculosis. He sent all the viscera to Sir Arnold Theiler, who, from this, inoculated guinea-pigs which in due course developed tuberculosis. The Union of South Africa were most particular in the matter of examination and they would not accept the certificate of a veterinary practitioner. They insisted on doing everything very carefully themselves.

Mr. De Vine said Mr. Howie's paper was full of valuable suggestions for the veterinary surgeon. It was necessary that the testing should be properly done, and for that reason the veterinary surgeon should personally carry it out. He was prepared to accept the result of the test every time when properly made. The result was always confirmed by the *post-mortem* and he had never known it fail. He believed a great deal of doubt was cast on the tuberculin test by stock-owners, due to nothing more nor less than to the carelessness with which the test was carried out. He had had personal experience of that and he knew it to be true. Tuberculin testing was not a thing to be done by Dick, Tom and Harry, and veterinary surgeons could not expect good results if it were. If a veterinary surgeon, as was too often the case, left it to the farmer or the stockman to take the temperature, it was seldom satisfactorily accomplished. They could not be too careful in testing animals with tuberculin, and the temperature must be taken at the proper time or they might be misled. He believed it was the laxity of the profession in this respect that caused buyers abroad not to depend on a practitioner's certificate. Previous to the war, there was a Tuberculosis Order, which was a good step forward towards the eradication of the disease. Unfortunately, it was suspended, and he thought they should urge the National to press for its restoration. The first thing towards freeing a herd from disease was to get rid of wasters, which were the great centres of infection. He knew cases where that had been done and they tested every six months without ever getting a reactor. It was difficult to establish a free herd, and to succeed they must have the enthusiastic support of the owner and his men. He thought Mr. Howie's remarks about doping were particularly interesting, and he was sorry to think they should have men in the profession who would assist in disguising the disease in order to avoid the result of the test. He looked forward to the time when this country was as free from tuberculosis as Denmark, whose enterprise in this matter was a worthy example to Great Britain. By drastic methods, Denmark had reduced the number of infected cattle from something like 48 per cent. to 2 per cent., and the health of the people was all the better for it.

Mr. Tudor Hughes said it seemed to him that the suspension of the Tuberculosis Order was the falsest piece of economy imaginable. When they realised the cost of discovering the cow that was giving tuberculous milk, the highly-paid medical officer and his staff, to say nothing of the veterinary officer and his assistants, it seemed very absurd that no power existed for ordering the destruction of the animal and thus stopping the source of infection. The offending cow was sold to a neighbouring locality supplying the same city and the whole costly procedure of tracking it down had to be gone through again without any benefit to the community who had to foot the bill. He supposed it was a matter of £ s. d., but it would certainly pay to kill every tuberculous animal and compensate the owner. It was pitiful to see the number of children suffering from consumption and to know that it was preventible. That was what he meant by describing the suspension of the Tuberculosis Order as the falsest of false economy.

Mr. Steele-Bodger thought the public were not sufficiently educated up to the importance of pure milk. He was afraid, too, that farmers were careless. They went in for milk production because it meant ready money, and they were not too particular as to what sort of milk it was. He agreed that it was very desirable to restore the Tuberculosis Order at the earliest possible moment.

Mr. Tipper thought it was of the utmost importance that the profession should be united in whatever position they took up. It was very unfortunate for farmers to hear different opinions expressed by different veterinary surgeons. Criticising some of the methods used to combat the disease, he said he had heard it stated that some of the so-called insanitary cowsheds were healthier than some of the modern

drawing-room cowsheds because the old ones did possess a certain amount of ventilation.

Mr. ASTON strongly dissented from the view of the previous speaker that the modern cowsheds were not infinitely superior to the old ones. He would like to take Mr. Tipper to some of the cowsheds in his district, and he would soon change his opinion. Congratulating Mr. Howie on his paper, he said the tuberculin test had always appealed to him as a reliable one. He commented on the fact that Hereford cattle were singularly free from tuberculosis. Although they wintered outside, he did not think that more than one per cent. of the breed suffered from the disease. Cross breeds suffered, and he thought there must be something about the Hereford cattle which produced immunity.

Mr. J. MARTIN, senr., said he had listened to the paper with a great deal of interest, because much that Mr. Howie had told them was of everyday use. He thought the cost of eliminating wasters made owners hesitate, and for that reason he thought it necessary that the Government should help by paying compensation. The disease came in various ways. He had seen it in the best and most modern cowhouses, and he had seen it in the old type of sheds to which Mr. Aston referred. He did not think it was a good thing for cattle to be up against a wall, breathing their own air over and over again. If the Tuberculosis Order came in again, and he agreed that it was necessary, it should be carried out properly by a good man. It needed an experienced man to undertake the inspection. It was all a matter of money and it should be done properly or left alone.

Mr. POWLEY spoke on the tuberculin test itself. He said in England we seemed to bind ourselves to the subcutaneous method, whereas in Canada and America they relied on the intradermal test. He emphasised the great importance of testing thoroughly, whichever method was used.

Mr. HOBAN asked from where farmers and dealers who did their own testing got the tuberculin?

Mr. PALMER asked whether it was wise, after testing animals, to cork the bottle up and use the tuberculin again? Would it not be better to get single doses?

Mr. MURRAY said he was interested in what the essayist said about the ophthalmic test. It was a simple test and could be done without arousing the suspicion of the farmer. Sometimes when he was doubtful what was the matter with a cow, he had applied the ophthalmic test without the farmer being any the wiser. With regard to the Tuberculosis Order, Mr. Martin seemed to infer that it had not been properly carried out in his own county of Shropshire, but he could assure him that in Staffordshire it was a great success. It seemed a pity to-day that, when they found tuberculosis in a herd, they were impotent to stamp it out. He was all for the immediate restoration of the Order.

The PRESIDENT thanked Mr. Howie for a paper which had created so much interest and conveyed so much valuable information. He agreed with all that had been said about the importance of the Tuberculosis Order, and he was sorry it had been suspended. Some people could not afford to dispose of their reactors and others would not do so without being compensated. He thought in the interests of public health, power should be given to eliminate re-actors from every herd and destroy them, but he was certainly in favour of the owner being indemnified against loss. Reactors would be destroyed for the public good and the public should pay for them. He could never understand why the testing of young animals was not advocated more. If some legislation were adopted as regards testing and marking animals, and the Tuberculosis Order could be re-introduced, it would go a long way towards the eradication of the disease.

Mr. HOWIE, replying to the discussion, first thanked the members present for the kind reception they had given to his paper and for their friendly criticism. He agreed with all that had been said about the importance of careful examining and testing. He often had to examine cows for clinical tuberculosis of the udder. Sometimes he had been unable to find tuberculosis and yet he knew that there was a cow in the herd giving tuberculous milk. Tuberculous lesions in the udder developed with extreme rapidity and to do any good monthly visits should be paid to all farms that were suspect. Lesions in the udder were so many and varied that they would require a paper all to themselves if they were to be fully explained. He thought knowledge was best gained by experience. He did not agree with Mr. Tipper as regarded old sheds being as good as modern ones. He never heard of a cowshed built on modern lines that was stuffy. Mr. Aston had referred to the apparent immunity of Herefords from tuberculosis. Perhaps their life outside might have something to do with it; but the Hereford was more a beef producer than a milk producer and there was not such a strain on its system as in the case of the dairy cow. Mr. Hoban asked from where the layman got his tuberculin. He believed anyone could get tuberculin by asking for it from any chemist. With regard to Mr. Palmer's question about the advantage of single doses, he agreed that tuberculin deteriorated rapidly, but in testing large herds he should not go in for single doses. Farmers, no less than the public, should be enlightened as to why all this fuss was being made about tuberculosis in cattle. He thought the veterinary surgeon was the only competent person to advise the farmer on this question, but let the advice be practical. He advised them to stick to common sense when discussing this subject with the farmer and to leave all theory out.

Braxy Preventive Inoculation.

Professor S. H. Gaiger writes commenting on the article on this subject recently published by us as follows:—

The bacillus of braxy is identical with the *Vibrion septique* of Pasteur, an anærobic bacillus closely allied to the *Bacillus chauvæi*, but readily distinguishable by its cultural characteristics. The similarity of the

lesions caused by the experimental inoculation of animals with cultures of the braxy bacillus to those set up by inoculation with the *Bacillus chauvæi* led to the belief that inoculation with the toxin of the braxy bacillus might act as a preventative in the way that has been claimed for the toxin of the black-quarter bacillus.

It is possible that at least some cases of black-quarter are in reality *Vibrion septique* infections both in cattle and sheep, and, in order to determine this point, practitioners could be of great assistance if they would forward to the A.D.R.A. laboratory lumps of affected muscle from newly-dead black-quarter cases in a boiled container, such as a syrup tin.

It is only in rare instances that veterinary practitioners can be asked to undertake braxy preventive inoculations. Most of the farms are far removed from the nearest practitioner, and since all the hoggs have to be inoculated during a period of a few weeks in September and October, they must either be done by the farmers themselves or not be done at all.

Royal (Dick) Veterinary College.

Proposed Centenary Fellowship.

The annual distribution of prizes at the Royal (Dick) Veterinary College, Edinburgh, took place on Wednesday, June 27th. Sir Robert Greig, Chairman of the Board of Agriculture for Scotland, presided at the function, and the prizes were distributed by the Duke of Atholl.

The Chairman said that a most interesting and important feature of the present occasion was the fact that it was now one hundred years since the Veterinary College began. On 24th November one hundred years ago, William Dick delivered a lecture which was the germ that developed into the Veterinary College. This centenary would be celebrated in the appropriate manner, but it was, he thought, desirable to mark in some permanent fashion the work which William Dick did for veterinary science. All his life he worked for the good of the profession, and the extension of the knowledge of veterinary science. It had naturally occurred to those concerned that, as he was specially interested in educational research, a suitable means of marking the work of William Dick would be to promote a centenary fellowship in research. If the necessary funds were raised for that purpose, it would then be possible for a graduate of the College to carry on for some time longer post-graduate study. That means of study should enable a series of students from the college to do much to promote the extension of veterinary science and the treatment, cure, and—what was most important of all—the prevention of disease. The suggestion ought to appeal, in the first place, to the stock owner and breeder, because he would be certain that he would benefit in due course. It should appeal also to those who desired to alleviate the sufferings of animals. The appeal for the promotion of this fellowship should be made to a wider audience than those who made a profit from the raising of stock. It concerned the community as a whole, because those who wanted clean milk and pure milk were interested in the advancement of the veterinary profession. From one point of view or another the appeal for funds towards this centenary fellowship was a wide one. One hundred years ago, even if it had been possible to provide research scholarships or fellowships, the opportunities for the fellow or researcher to conduct research would have been few or none. To-day they found the greater field of opportunity. He did not think that in any time in the history of veterinary science had there been a better prospect for the graduate of a veterinary college. William Dick was far ahead of his times; he was another demonstration of the power of vision. If he were alive to-day, he would see some of his dreams coming true. It was for the students of this second century to make it more illustrious and more useful by their work.

The Principal, Dr. Charnock Bradley, said that the number of students on the books during the session that was still current was only three less than in the preceding session. He did not attach too much importance to numbers, but he did attach importance to quality. The quality of their work had been all that could be desired. The Royal College of Veterinary Surgeons had in its gift five prizes for which the student had no option but to compete, and the annual report showed that students of the College won three out of the five. That, he thought, was sufficient justification for his contention that the quality was all one might expect. In actuality, of course, they were not satisfied, and he hoped they never would be.

After presenting the prizes, the Duke of Atholl said that he was one of the people who had been able to realise the value of veterinary science. They could not have been in a cavalry regiment without realising what it meant towards the success of a campaign, as well as from the humanitarian point of view. If people would realise that animals were just like themselves, they would take more care and relieve them from suffering and pain.

Prize List.

The following is a list of the prize-winners:—

Chemistry—Silver medal, E. J. Heather; bronze medal, H. Burrow.

Practical Chemistry—Bronze medal, D. R. Wilson.

Biology—Silver medal, J. S. Adamson; bronze medal, D. R. Wilson.

Junior Anatomy—Silver medal, H. Burrow; bronze medal, D. R. Wilson.

Senior Anatomy—Silver medal, A. J. Weighton; bronze medal, W. J. B. Robson.

Practical Anatomy—Silver medal, D. Cameron.

Histology—Bronze medal, J. A. R. Robertson.

Physiology—Silver medal, A. J. Weighton; bronze medal, J. N. Ritchie.

Zootechny—Silver medal, W. J. B. Robson; bronze medal, J. S. Kingston.

Materia Medica—Silver medal, J. Hill; bronze medal, E. R. Corrigall.

Pathology—Silver medal, E. R. Corrigall; bronze medal, J. Hill.

Bacteriology—Silver medal (Scott), E. R. Corrigall; bronze medal (Scott), J. Hill.

Hygiene—Silver medal, E. R. Corrigall; bronze medal, J. I. Magowan.

Surgery—Silver medal, G. Pfaff; bronze medal, W. J. Ironside.

Medicine—Silver medal, R. F. Montgomerie; bronze medal, G. Pfaff.

Obstetrics—Silver medal, R. F. Montgomerie; bronze medal, P. L. le Roux.

Clinique—Silver medal, R. F. Montgomerie; bronze medal, G. Pfaff.

Parasitology—Bronze medal, R. F. Montgomerie.

Macfarlane Medal—R. F. Montgomerie.

£21 Prize—R. F. Montgomerie.

The Prince of Wales has been elected President of the Central Council of Milk Recording Societies and Viscount Elveden vice-president.

Mr. G. A. Garden, Rannachie, Banffshire, had a number of his cattle grazing in a field close to Rathven Railway Station. Quite a number of the animals became ill, and several died. It was discovered that the animals had partaken of paint, which had been deposited among whin bushes.

The Veterinary Record.

7th July, 1923.

National Veterinary Medical Association of Great Britain and Ireland, Limited.

Cheques should be made payable to the Acting General Secretary at the Offices of the Association, 12 Buckingham Palace Road, S.W.1.

N.B.—Members receiving this paper in a brightly-coloured wrapper will please understand that their subscription is already overdue, and should be forwarded at once to the above address.

Conference Notice.

REDUCED RAILWAY FARES.

All members intending to visit the Congress of the Association at York from the 14th to the 17th of August, may, on application to the Secretary, N.V.M.A, obtain a voucher entitling them to a railway ticket at the ordinary single fare and a third for the double journey.

Members should be careful to state how many vouchers they require.

THE PROFESSIONAL LIFE.

Canada has set an example to the world by granting an annuity of £1,500 to Dr. Banting—"sufficient to permit him to devote his life to medical research"—as a recognition of his discovery of "Insulin." This is the right way to encourage scientific work. Dr. Banting will not have to wait until he is dead for national recognition of his work—recognition that really matters most to men engaged in scientific research.

An endowment of this kind frees a man from the principal cares of life and relieves his mind from the worry and anxiety of providing for the future, not only of himself but of those most dear to him. A man's first desire is to provide adequately for his wife and family and to educate his children in order to give them a fair start in life. Till he has done this his aim must always be to earn sufficient money. The quest of money, material comfort and wealth is antagonistic to the true professional aim, that of working for the benefit of others. To nearly all of us it is a necessary evil, and, strive as we may after professional ideals, commercialism in the form of personal gain is bound more or less to influence us, unless we are in the happy position of being of independent means. It is almost an impossibility to live the true, ideal professional life when want is knocking at the door. Means must be found to satisfy immediate needs, and high ideals do not satisfy physical hunger.

Hard things have been said on many occasions of our profession—that we are not professional, that we do not take or earn our proper status, that we are treated no better than tradesmen, that we quarrel amongst ourselves, that we are jealous and suspicious of our neighbour, that we undercut one another, and many other such-like opprobrious comments. We deserve some of these hard sayings, no doubt, but we can plead a very great deal in extenuation.

Our little profession is a very, very poor one. It was only given professional status in 1844, and since that time has been struggling along, always aiming at and hoping to attain to professional ideals, but handicapped throughout by lack of means and the continual necessity of employing old-fashioned trade methods in order to eke out a bearable existence. If a man were not sought for his knowledge and advice, he must needs sell medicines in order to gain a livelihood, or keep a forge so that those who made use of his shoeing smith might be encouraged to buy his medicines, even if they did not seek his advice. It is so easy to slip back from the professional to the commercial—yes, even to quackery and to patent medicine vending. Professionalism exists primarily for the good of others, commercialism primarily for the advancement and enrichment of self. The two are incompatible. Our ideal as a profession must always be to cultivate the one and eliminate the other. But, again, the difficulties and obstacles in the way are physical necessities and a desire for a share of worldly comfort. Many members of our profession are little acquainted with worldly comfort. They work hard for long hours, and have little enough to show for it at the end of the year. Nay, more, at the end of their lives they, only too frequently, are forced to leave wives and children insufficiently provided for—the subjects of benevolence and charity. We have an excellent benevolent fund, and everyone of us is in sympathy with its work. Cannot we manage to show a little of that charitable feeling and benevolence to our neighbours while yet they are alive?

We are ready enough to help a widow or a man who is "down and out," why cannot we help him before, while still he can do some good in the world? The first principle of a profession should be to work together for the benefit of others. There should be no such thing as "opposition." Let us see to it that we do our utmost to work in friendship with our neighbours for the good of the public and be content. It is so inconsistent to talk loudly of "devoting one's whole life to the alleviation of suffering in poor dumb animals" when one is devoting the whole of one's time to making as good a living as possible and piling up wealth from the sale of drugs. If we want a professional status, we must live professional lives, and the public will judge us accordingly.

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases

Treatment of Interdigital Abscess with Autogenous Vaccine.

By Capt. H. S. Elphick, Newcastle-upon-Tyne.

My main excuse for recording these cases must be that the dog suffers so terribly when affected with them. My readers will, I trust, bear them in mind, and if any will try the treatment and record their results, I will take it as a compliment, whether these be satisfactory or not.

It will be noticed that various breeds are concerned, but my experience in the past has been that Airedales, Aberdeens, Bedlingtons and Spaniels have been the most constantly affected.

No other treatment, beyond the opening of the abscess or abscesses for obtaining the swab, was adopted. The part was cleansed with an antiseptic lotion at the time of incision.

1. *Aberdeen Terrier.* Very fat old dog, whose life was a burden to him and his owners. Abscesses and old scars all round. Swab was taken on February 21st, but unfortunately the record of the infective organisms was lost. 10 c.c. vaccine were made, having 1,000 million organisms in each c.c. He was inoculated on five occasions, viz., February 28th, 1 c.c., March 3rd, 2 c.c., 7th, 2 c.c., 15th, 2 c.c., 24th, 2 c.c. After the first dose the dog was ill, but a little brandy quickly pulled him together. He made an excellent recovery, and to date has had no recurrence. The owners are delighted, for the old chap is now "as lively as a cricket."

2. *Fox Terrier.* About four years old. Abscess left fore-foot. Swab was taken March 3rd. Specimen yielded pure cultures of *B. coli*, from which 12 c.c. vaccine were made, having 1,000 million organisms in each c.c. The dog was vaccinated on six occasions, viz., March 10th, 1 c.c., 13th, 2 c.c., 17th, 2 c.c., 20th, 1 c.c., 24th, 2 c.c., and April 6th, 2 c.c. No untoward symptoms were presented except that after third dose or so, only 1 c.c. was injected on the fourth occasion. Up to date the dog is still quite well, and there has been no recurrence.

3. *Airedale Terrier.* Nine years old. Abscesses and old scar tissue all round. This dog was in a bad state physically, and life scarcely worth living for him. He was a great favourite, and his owner was greatly concerned about him. Swab was taken on March 8th. Specimen yielded cultures of *B. coli*, staphylococcus albus and staphylococcus aureus, from which 12 c.c. vaccine were made, having 1,000 million organisms in each c.c. He was inoculated on seven occasions, viz., March 16th, 1 c.c., 20th, 1 c.c., 26th, 2 c.c., 29th, 2 c.c., April 4th, 2 c.c., 12th, 2 c.c., 20th, 2 c.c. Recovery was uninterrupted, and the dog has a new lease of life, being now as playful as a pup. The old scar tissue almost disappeared.

4. *Aberdeen Terrier.* Nine years old. Abscesses right fore-foot. Swab was taken on March 26th. Specimen yielded cultures of a diplococcus (resembling pneumococcus) and staphylococcus albus, from which 12 c.c. vaccine were prepared, having 500 million organisms in each c.c. The dog was vaccinated on five occasions, viz., March 31st, 1 c.c., April 4th, 2 c.c., 9th, 2 c.c., 13th, 2 c.c., 18th, 2 c.c. This dog, like the Airedale, has a new lease of life, and is continually looking for a battle.

5. *Bedlington Terrier.* Ten years old. Old-standing abscesses all round and much scar tissue. Bodily condition good, but suffered a great deal, and was extremely sensitive on his own account. Swab was taken on April 1st. Specimen yielded cultures of staphylococcus aureus, a small diplococcus and a large diplococcus, both of uncertain species, from which were prepared 12 c.c. vaccine, having 1,000 million organisms in each c.c. The dog was vaccinated on five occasions, viz., April 6th, 1 c.c., 10th, 2 c.c., 16th, 2 c.c., 20th, 2 c.c., 25th, 2 c.c. He made an excellent recovery.

6. *Aberdeen Terrier.* Young dog. Abscess left fore-foot. Swab was taken on May 7th. Specimen yielded cultures of staphylococcus albus and a diplococcus, resembling diplococcus pneumoniæ, from which 12 c.c. vaccine were made, having 500 million organisms in each c.c. The dog was vaccinated on six occasions, viz., May 12th, 1 c.c., 16th, 2 c.c., 19th, 1 c.c., 25th, 2 c.c., June 1st, 2 c.c., 15th, 2 c.c. He was unwell after the second inoculation, so only 1 c.c. was given on the third occasion. Up to now there has been no recurrence, and the dog is healthier and better in himself—in fact, quite in normal health.

All the dogs improved in health and spirits, and there was no abscess formation at the seat of injections, which were given alternately subcutaneously in the region of the thigh and belly.

It will be noted that on only two occasions were the same organisms found in the specimens, this, to my mind, proving the wisdom of the use of an autogenous vaccine rather than a stock vaccine.

It may be rather too soon to congratulate oneself on the results obtained, but I have the word of the several owners that any recurrence will be reported.

Grass Sickness.

By W. Harley, M.R.C.V.S., Bourtreehill, Hamilton.

The following note may be interesting to anyone who has not yet come across this condition.

Subject.—A pit pony, which had been turned out to grass for a few days and worked at intervals. For two days it had been off food and quite suddenly developed acute symptoms.

Symptoms.—When I first examined the animal it was standing back in a corner, with head depressed, and obviously very ill. The muscular twitchings seemed to affect the whole body and make the animal unable to stand still. Even the muscles about the base of the ears were twitching. The straightening of the hind legs was not unlike that seen in a cow with stomach staggers. There was a good deal of

salivation, and the jaws were shut tight, and could only be opened with difficulty, the pony greatly resenting any such efforts. He was anxious to eat and drink, but could not swallow, and the water would fall from his mouth whenever he lifted his head from the pail. There was patchy sweating over the body, and distinct soapy sweating was observable between the hind legs. The pulse was imperceptible owing to the muscular twitchings. After an examination of the animal, what struck me very forcibly was that I had never seen anything like it before. Symptoms of cerebro-spinal meningitis were obvious, but the complete inability to swallow was puzzling.

Treatment.—To quieten him I gave an injection of morphia, a drug I seldom use in horses, and left two chloral draughts to be given if the jaws relaxed and he could swallow. Cold applications were applied to the head to give the onlookers something to do. After a little the pony quietened down, and I repeated the morphia before leaving.

Course.—The next morning, before starting off, I looked up Mr. Buxton's article on "Grass Sickness," and I had then no doubt whatever about the pony's trouble. On arrival he was distinctly better. The muscular twitchings, sweating and mild snoring had disappeared. He seemed dull, but the pulse was fairly strong—about 60. The bowels had never moved, in spite of a quart bottle of linseed oil given by the ostler before the acute symptoms developed. He could now swallow water, but was not inclined for food. I administered ℥iv aloes, and warned the manager about grass disease.

On the third day the improvement was continued. He was brighter, but inclined to rest a good deal. The pulse was strong—about 40. There was a little salivation, and the mouth was easily opened. There was still no movement of the bowels, and some dried fæces had been taken from the rectum. He now wanted to eat grass, and seemed to swallow very well. I administered a stimulating draught and left some to be given at intervals.

When I arrived upon the fourth day it was obvious the pony was very fit. The bowels had moved the previous night and a good quantity of fœtid material had come away. The dryness of the fæces astonished even the ostler, who declared it was not like the fæces of a pony that had been on grass for days. The animal is still taking his food and going on well.

Remarks.—The only point that raised a doubt in my mind as to my diagnosis of grass sickness being correct was the fact that the pony recovered, but when I compare the picture with those given in Mr. Buxton's paper, it is too clear to admit of doubt. Why the pony got better I do not know. The ostler declares that recovery was due to a half gill of whiskey he gave it as soon as it could swallow.

Pardonable.—Old Lady (to druggist): I want a box of canine pills. Druggist: What's the matter with the dog? Old Lady (indignantly): I want you to know, sir, that my husband is a gentleman.—The druggist put up some quinine pills in profound silence.—*Pharm. Journal.*

National Veterinary Medical Association.

Presentation to Mr. J. B. Buxton.

The following is the list of subscriptions received from June 27th to July 18th to the Fund opened by the Association on behalf of the Presentation which it is proposed to make at York to Mr. J. B. Buxton, whose resignation from the position of General Secretary was considered at a recent meeting of Council:—

	£	s.	d.
Previously acknowledged	34	7	0
Mr. R. Niven	0	10	0
Mr. G. Sutton	0	10	6
Mr. W. W. Gulleford	0	10	6
Dr. E. S. Shave	0	10	6
Mr. J. B. Forsyth	0	10	6
Mr. A. Hewett	0	10	6
Mr. M. Tailby	0	10	6
Mr. F. H. Tranter	0	10	6
Mr. G. Banham	0	10	6
Mr. J. W. Willett	0	10	6
Mr. A. E. Willett	0	10	6
Mr. H. Begg	0	10	6
Mr. W. Weston	0	10	6
Mr. E. Whitley Baker	0	10	6
Mr. C. Pack	0	10	6
Mr. L. C. Tipper	0	10	6
Mr. Alex. Monro	0	10	6
Mr. W. Woods	0	10	6
Anon.	0	10	0
Mr. F. G. Edwards	0	10	6
Mr. W. P. Stableforth	0	10	6
Capt. A. L. Robertson	0	5	0
Mr. W. D. Wallis	0	10	6
Mr. P. R. Turner	0	10	6
Mr. F. S. Warburton	0	10	6
Mr. C. Elphick	0	10	0
Capt. H. S. Elphick	0	10	0
Mr. S. J. Motton	0	10	6
Mr. G. Howie	0	10	6
Mr. T. Maguire	0	10	6
Mr. W. Jackson Young	0	10	6
Mr. W. G. Forbes	0	10	6
Mr. F. McD. McKenzie	0	10	6
Mr. W. C. Patrick	0	10	6
Mr. J. B. Tait	0	10	6
Mr. E. A. West	0	10	6
Mr. T. C. Garry	0	10	6
Total	£53	8	0

It is greatly regretted that, owing to delay experienced in the preparation of the illustration, it was found impossible to insert in last week's *Record* the plan, promised to members of the N.E.V.M.A., showing the position of the Veterinary Insurance Company's stand (No. 397) at the Newcastle Royal Show.

At a Cumberland agricultural show, the judges of the horse classes were Mrs. Roberts, wife of a prominent Clydesdale breeder, and Miss Parkin, who until recently hunted her own pack of beagles.

Association Reports.

Western Counties Division.

The more common Diseases of the Genital Organs of Cows, their Diagnosis and Treatment. (*Continued*).

Captain L. C. Maguire proceeded :

I should now like to give a few words of warning as to accidents which may easily occur in manipulation and treatment of the genital organs. When we consider how extremely tortuous is the cervical canal of the cow's uterus, in the normal condition, and that when diseased this may be very greatly accentuated, very great care must be exercised in its exploration, as it is very easy to penetrate the cervical wall. Penetration may result in the formation of pericervical abscess, which is generally a very serious condition. Palpation of the uterus should be very carefully done, as in certain diseased conditions it is extremely easy to rupture; the same applies to examination of the fallopian tubes, for should a pyosalpinx or such like pyogenic condition be present, the wall of the tube may be easily ruptured, thereby liberating the enclosed pus, to be followed by peritonitis. Great care should also be exercised in pressing out a retained *corpus luteum*, as I have seen very serious and alarming results follow this operation. Having dislodged the body, pressure should be exerted on the remaining crater for a few minutes, so as to control the hæmorrhage which, as I believe, frequently follows.

I have only given a very brief description of the subjects under discussion but, as sufficient could be written about almost any one of the lesions described to fill this paper, you will, I am sure, understand the impossibility of going further into them. I shall now briefly discuss the above-mentioned pathological conditions in their relation to sterility and abortion.

Lesions of the ovary frequently prevent the normal ripening of the follicle and expulsion of the ovum. In cystic degeneration of the ovary, a follicle does not ripen and burst at every twenty-one or twenty-two days, but instead one or more follicles may increase in size simultaneously. These may increase until they attain the size of a hen's egg. At the same time the animal exhibits somatic and psychic disturbances, which are characteristic of the disease known as nymphomania. While this condition is in existence, true ovulation does not take place, therefore, the animal is sterile. Cystic degeneration of the *corpus luteum*, so often associated with salpingitis and pavilionitis, is another condition which is frequently responsible for absolute sterility. Should ovulation take place, there is no opportunity for the ovum to descend through the fallopian tube, for, should pavilionitis be present, the normal function of the fimbriated extremity of the tube is lost, therefore instead of the ovum being drawn into the tube by suction towards its mouth, provoked by the wave-like motion of the fimbriæ, it falls into the peritoneal cavity and is lost. Should salpingitis be present, even though the ovum be received into the mouth of the tube it is unable to descend or the spermatazoon is unable to ascend, owing to the pathological changes brought about in the tube. These conditions generally cause absolute sterility.

Retained *corpora lutea* are responsible for sterility while the condition lasts. So long as a fully developed *corpus luteum* is present in an ovary ovulation will not take place; this condition is most favourable to treat, for as soon as the *corpus luteum* is removed, its inhibiting action on the ovary is also removed and the ovary immediately returns to its normal function.

Embedded *corpus luteum* is a much more serious condition, for this is generally associated with gross pathological lesions in the uterus; pyometra may be present or the uterus may contain a macerated or dessicated fœtus. In either condition the mucous membrane of the uterus is generally so damaged that it has lost the power to produce its hormone, which is believed to have a stimulating effect upon the ovaries and by its accumulative actions, in conjunction with the post-pituitary and adrenals, is responsible for the normal regression of the *corpus luteum* every eighteen or twenty days. Should the endometrium be damaged beyond repair, retrogressive changes occur in the ovaries and they sooner or later lose their power of forming ova. In such conditions absolute sterility is the result.

We now come to the more common conditions of the genital organs which are responsible for passive sterility and abortion; these are cervicitis and endometritis. In these pathological conditions the normal alkaline reaction of the glandular secretions of these organs is changed to acid—this may be of varying degrees. Should there be a high degree of acidity, it immediately impedes the action of the spermatozoa, causing devitalisation or absolute death. either of which will be responsible for the failure of the spermatozoa to reach the ovum. Should the spermatozoa survive its perilous journey from the vagina to the fallopian tube, where it reaches the ovum and impregnates it, it is then necessary for the fecundated ovum to descend the tube, reach the uterus, and become securely nidated there before pregnancy takes place. When endometritis is present in a mild form the phenomenon of fecundation and nidation of the ovum may take place successfully. But the ovum, having settled itself in the decidua, has not yet escaped the dangers which may prevent its normal development and termination in normal parturition. As soon as the impregnated ovum becomes imbedded in the uterus cell division begins to take place. Soon a layer of cells is formed, known as the trophoblast layer, and which cells are forerunners of the placenta, whose function it is to secrete a hormone which stimulates the formation and retention of the *corpus luteum* of pregnancy, at the same time inhibiting the action of the endometral hormone. It also stimulates the thyroid ; therefore we have the collective action of the hormones secreted by the trophoblast layer or placenta, the thyroid

and *corpus luteum* exercising an inhibitory action on the hormones of the endometrium and the ovaries. Should the former overcome the latter, the ovum is protected and pregnancy continues to its normal termination. Should the nidated ovum be not properly nourished, however, it becomes devitalised and its trophoblast layer is unable to form sufficient internal secretion to inhibit the hormones which antagonise this secretion. The ovarian intersterital and follicular internal secretions, in conjunction with the internal secretion of the endometrium, are responsible for œstrum and menstruation, as much as they have a special cumulative, selective, periodic and congestive influence on the uterus, whereby the uterine walls become filled with blood, their capillaries become dilated, the endometrium is stimulated to hyperplasia, becoming thicker and turgid. Should no fecundated ovum settle there or, if already there, become devitalised, diapedesis and rhexis take place; the uterus contracts and expels its contents as the menstruous discharge. The above is the phenomenon which generally takes place in that species of sterility where œstrum returns at the sixth, ninth, or twelfth week after service. This is a species of sterility commonly met with in practice. Disease of the vagina, except acute necrotic vaginitis and complete atresia, such as the condition commonly called "White Heifer disease" is not very often responsible for sterility in the cow.

Discussion.

Mr. Edwards: I am not quite sure whether Captain Maguire mentioned a form of sterility due to abortion. Can sterility be due to abortion apart from any malformation of any organs; is there a disease called sterility?

Captain Maguire: Yes, in conjunction with epizootic abortion.

Mr. Roberts: In regard to vaginitis or any inflammation of the vagina, the trouble seems to me that we cannot very well swab out the womb three or four times a day; it is a matter of £ s. d. An internal treatment of formalin has always been most successful with me. I had a little trouble last year—at first we thought it was vaginitis or something to do with the bull. Two or three of the cows had a creamy discharge from them; all the cows, even those which had not been to the bull had got this discharge some weeks afterwards. There was no constitutional disturbance. Most of these cows had been in calf six months and some not at all, they were practically free from bacilli or infection. Within a fortnight they were all better.

Mr. Gibbings: In my experience 95 per cent. of the cases of sterility are due to the abortion bacillus or overfeeding. Concerning the diseases of the ovary, the Veterinary Profession is following in the wake of the medical victims of fashion. Some years ago, if a woman experienced pain, she was put on the operating table and unsexed. These conditions of the ovary are largely a Yankee production, and I am rather suspicious of what the Yankees say. An American veterinary surgeon suggested a drachm of chloroform, injected. I tried this treatment—by the time I had washed my instrument I was in time for a *post-mortem*. Is it easy to distinguish between this condition of the *corpus luteum* and the normal ovary? Furthermore, if one were to suggest this operation, is there any danger attending it and is it a business proposition? This is the first question the farmer would put. In regard to this necrotic vaginitis, this is a disease I have met with in several cases. It is invariably fatal, always associated with persistent strain on the part of the cow, and you get, in addition to these first stages, conditions in which the vaginal mucous membrane turns black, almost like the conditions met with in swine fever. I saw in a paper some time ago that it could be cured by treating the vagina with small pieces of tow in a saturated solution of a corrosive substance. *Re septic metritis*, I do not agree with Captain Maguire as to washing the uterus three times a day, I think you would do more harm than good. Pump out the whole of the contents of the uterus, and then irrigate the uterus with permanganate of potash. This leads me on to that bone of contention—the time at which one should take away the placenta. I do not allude to those cases where one can introduce his hand into the vagina, give the placenta a twist, and find that it comes away. My experience is that it is bad surgery; I tried it and I have dropped it. I have obtained a great deal better result by allowing the placenta to remain a week before removal. One condition that Captain Maguire has not mentioned, is that in which you get an injury involving the recto-vaginal septum, etc.

Mr. Porrington wished to thank Captain Maguire for his important and able paper. He could not go fully into the question of the diagnosis of the diseases of the fallopian tubes of the ovary. He did not think the condition of these important parts could easily be diagnosed by rectal examination and he also did not quite agree with the lecturer in irrigating and washing out the uterus so often—he had found that a good deal of injury arose from that, and he remembered cases wherein an unsuspected rupture of the uterus led, after the injection, to a speedy *post-mortem*.

Mr. Nelder: Captain Maguire deserves the thanks of the Association. I should like to ask him what treatment he adopts in cases of sterility. Where you have abortion in a herd I find great difficulty in getting the younger animals pregnant. What is the reason? Why they did not take the bull I am at a loss to understand. Can Captain Maguire give us any reason for that? In herds where epizootic abortion exists, a number of the herd may be tested and do not give the reaction, yet many of the younger animals take the bull frequently and do not become pregnant; is that sterility a disease, or in some unexplained way due to epizootic abortion, though the animals may yet be free from that disease?

Mr. Gibbings: Can Captain Maguire state positively whether, in the early stages, a cow is pregnant or not?

The Chairman: The paper is of a nature that requires it to be read through and studied so that one may be familiar with the various points raised. There is sufficient material in each one subject to form a separate paper. I think those gentlemen who said they would like to read the paper before they discussed it come near to the mark. We should like to rub up our knowledge of these technical subjects. Is it a commercial proposition to take on the operations? As we have not believed it to be so, we

have not followed up the various diseases of the uterus and fallopian tubes. I doubt very much if it would be a commercial proposition to remove the ovary—the farmer would say it would be better to fatten the animal.

THE REPLY.

Captain MAGUIRE: Mr. Fyrth asks whether those cases he describes are true, "White Heifer" disease. These diseases are caused by either cold, or poor construction of the vaginal walls, or they are congenital. The fluid is held up outside the external *os* between the periods, and it finally becomes a bitter-smelling discharge. I was asked to attend a pedigree heifer suffering from that condition. I operated on it and got my finger in and broke her down. She was put to the bull and she has just calved. I have seen other cases where no good results followed—the walls of the vagina could not be broken down.

Mr. Gibbings wants to know why some heifers which do not react to the test for abortion remain sterile: That has been a subject which has been troubling investigators for a considerable time. In Switzerland, Denmark and America they have come to the conclusion that the infection in these animals is natal infection, continued to post-natal infection, derived from lesions in the genital organs, metritis, and cervicitis—in other words, a condition which infects the calf prior to birth, and which has a more or less inheritive action on the genital organs of the animals in the post-natal stage, producing lesions which prevent impregnation taking place. The next things are specific bacilli, sometimes the *bacillus coli*. Mr. Gibbings says he does not pay much attention to the American ideas. America is not the pioneer in these studies; the primary studies were carried out in Switzerland, and in Denmark investigations were carried on several years before they were taken up in America. I do not think I said in vaginitis it was necessary to douch the vagina three times daily, but once daily. In acute endometritis it should be done three times daily, and the majority of attendants carry it out correctly and readily. In chronic endometritis once in a week or ten days is sufficient. The stomach pump is an instrument which I absolutely condemn.

Mr. PENHALE: The writer stated there was great danger in rupturing the uterus. A force pump should never be used; you do not know what quantity of stuff you are injecting. A smooth piece of hose-pipe is best. I irrigate by the ordinary method with an ordinary funnel. I put the end of the tube into the *os* and, holding the funnel with my right hand, guard the outlet of the stomach tube with my fingers and put half a gallon in by gravity. While your funnel is half full of water, throw it down—you immediately get a syphon. There are always threads of placenta detached by syphoning in injecting any antiseptic liquid. You can syphon out every drop of fluid you can inject. As regards the expense of the treatment, I should not advise it for low grade animals; I treat nothing but pedigree animals, the only mares being thoroughbreds worth £2,000 to £3,000. It makes all the difference. I have not been asked to treat an ordinary shire mare. One cow had vaginitis very badly, the mucous membrane being detached; she cost £1,500.

With regard to corporeal discharge, I should think it was practically the same as contagious vaginitis spread perhaps by contamination in the fields or byres and not connected with contagious abortion. Concerning acute vaginitis not coming from abortion occurring in herds of pedigree heifers: It must be exceedingly contagious, and it could not be said that it was carried in the food. It had a specific selective action on the vagina, whatever affection it was.

Regarding removal of the placenta: In one case you get the placenta detached sufficiently to remove it by just catching it in your fingers and removing it. To be absolutely correct, you want to make a visit every day and arrive at the proper period for it to be detached. It is wrong to lay down a hard and fast rule. It might become sufficiently detached in two days, at other times in a fortnight, or it might be left until it rotted away. The placenta may be got away at once by extracts of the ductless glands, but they must be given within about 24 hours. If the animal has not cleansed in 24 hours an examination must be made. If the placenta cannot be detached, leave some antiseptic in the mouth of the uterus, put in a sponge dry and impregnated with antiseptic; the fluids will swell the sponge and it will have a dilating effect if the *os* has any tendency to close. Otherwise, after the third day you cannot get your hand in.

VOTES OF THANKS: A hearty vote of thanks to Captain Maguire for coming so far to read them so valuable a paper, was proposed by Mr. BLACKWELL, seconded by Mr. BLORE, and carried with acclamation.

A vote of thanks was also proposed to the retiring President by Mr. G. H. GIBBINGS, seconded by Mr. PENHALE, and carried unanimously.

This terminated another very successful meeting of the Association.

W. P. STABLEFORTH, *Hon. Secretary.*

Foot-and-Mouth Disease.

The existence of foot-and-mouth disease has been confirmed on premises at Stevington, near Bedford. The Ministry of Agriculture has issued an order prohibiting the movement of animals in an area within a radius of approximately fifteen miles of the infected premises. The district includes parts of the counties of Bedford, Northampton, Huntingdon, and Buckingham.

A serious outbreak of foot-and-mouth disease is reported from Jersey. The origin of the outbreak has been traced to a farm near St. Peter's Barracks, and it is suggested that the infection was imported in material brought over from Ireland by the King's Liverpool Regiment, which recently returned to Jersey.

The Hon. Secretary of the Eastern Counties Division advises us that on page 429, col. 2, of our issue of June 16th, the name H. J. Loveless (Ipswich) should have been W. F. Loveless (Bressingham, Diss), proposed as one of new members of the division.

Notes and News.

The Editor will be glad to receive items of professional interest in these columns.

Diary of Events.

July 10th—Meeting of the Western Counties Division, at The Seale Hayne Agricultural College, Newton Abbott, Devon.
„ 10th—Meeting of the Derbyshire Division, Royal Hotel, Derby.
„ 12th—Meeting of the Central Division, 10 Red Lion Square, W.C.2.
„ 12th—Mid-West and South Wales Division Quarterly Meeting, at Weston-super-Mare.
„ 12th and 13th—Ninth Annual Conference of the National Association for the Prevention of Tuberculosis, to be held at Birmingham.
„ 13th—N.V.M.A. Editorial Committee Meeting, 12 Buckingham Palace Road, S.W.1.
„ 20th—Meeting of the Royal Counties Division at Oxford.

Annual General Meeting of the N.V.M.A., August 15th, at York.

Thursday, June 28th, saw a re-awakening of the Southern Counties Division at Southampton. Mr. Whitley Baker presided over a gathering of twenty-one, which is the largest attendance for many years, and bodes well for the future of the old Society. The new secretary, Mr. John Facer, managed his duties as if he had been accustomed to secretarial work for a long while, and he will prove a most popular officer—a very valuable asset to any division.

* * * *

Many veterinary surgeons who know Mr. H. W. Aylott will be pleased to hear that he was present and still reporting for the S.C.V.S. He first reported the meetings when the late Mr. A. J. Todd became secretary some twenty years ago. Since then he has acted more or less as assistant secretary—rather more than less. His help has been invaluable, and it is in a large measure due to his keenness and industry that the Society still exists, for it has passed through some very evil days. Mr. Aylott is known to very many of our members and has ingratiated himself with us all. He well deserved the compliments paid to him at Southampton.

* * * *

Six or seven new members were nominated for membership, and we hope that if they are not already members of the National, we may soon welcome them as such. After the meeting Major Hobday very kindly gave a surgical demonstration—one of those instructive exhibitions which have now been enjoyed and admired by so many of us all over the country. Altogether a most enjoyable afternoon, and we hope Mr. Whitley Baker is satisfied. He ought to be a proud man, since this success was evidently just waiting for his second Presidency.

A member informs us that one of the veterinary colleges requires a veterinary surgeon as house surgeon, and is offering as salary three guineas a week and rooms. He comments on the fact that this salary is less than that fixed for a junior public appointment by the Council of the N.V.M.A., namely, £250 per annum. No doubt this is a much-sought-after post in spite of the emoluments, but we think—and we are not alone in our opinion—that £156 per annum is a meagre salary, especially as the recipient has to find his food and attendance. This sets a bad example to other institutions and to public bodies, and makes the efforts of this Association for improved salaries all the more difficult of attainment. Cannot this College see its way to give another guinea a week at least?

* * * *

Another member, writing to us, suggests that we are devoting too much space to public health matters, and asks for more clinical articles and other subjects of interest to country practitioners. We sympathise with his request very sincerely indeed. But does the fault lie with this journal? We cannot make bricks without straw; in other words, we cannot sit down in this office and reel off scores of clinical articles on country practice, or if we did would they be appreciated? It is a fact that, as a rule, those who make complaints are those who contribute least. It is for the country practitioners to record their cases. We will publish them readily enough. Considering the wealth of clinical material in the country practices, members should feel ashamed of themselves for their indolence and apathy, and promptly take steps to make amends for their delinquencies.

D.V.S.M. Successes.

At the D.V.S.M. examinations, held from the 26th to the 29th June, the following candidates were successful:—Douglas Buchanan, P. F. Dolan, D. A. Gill, J. R. Haddow, and Charles Machattie.

Death of Paisley Veterinary Inspector.

The death has occurred at his holiday residence in Millport of Mr. Andrew M'Geoch, M.R.C.V.S., Paisley. Mr. M'Geoch, who was in his 75th year, would this year have celebrated his jubilee as veterinary inspector for the burgh of Paisley. An authority on meat inspection, Mr. M'Geoch was frequently called upon to give advice to other local authorities.

Army Veterinary Service.

The following senior officers of the Royal Army Medical Corps have passed the prescribed examination for promotion:—

Majors W. W. Browne, O.B.E., D. G. Carmichael, B. G. Patch, J. D. Richmond, D.S.O., O.B.E., H. C. Hildreth, D.S.O., R. R. Lewis, A. A. Meaden, D.S.O., J. H. Douglass, O.B.E., F. J. Garland, D.S.O., M.C., H. W. Russell, O.B.E., G. S. Wallace, O.B.E., E. G. R. Lithgow, A. E. S. Irvine, D.S.O., W. E. C. Lunn, M.C., and G. F. Dawson, M.C.

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

The Use of Autogenous Vaccines.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I send herewith a short dissertation on some cases of Interdigital Abscess in dogs, and trust they may prove interesting. [See our Clinical columns.—ED.]

I must say the results in all the six cases have proved the use of an autogenous vaccine to be, to my mind, *the thing*. I have used such in various other cases with remarkable results, one especial case having turned out a marvel. It was a case where a cow kicked back when being bedded down. The fork entered at the back of the fetlock and went right through the joint in a downward and forward direction. She was a valuable cow, a great milker and in calf. Slaughter was thought of, but I asked the people to let me try a vaccine treatment. After some demur, consent was given. Result—cow cured, but has a stiff joint. I may say the discharges were both copious and evil-smelling, and it was these that caused the doubt in the minds of the owners. The whole thing cost them a bit of money, but they paid up and did not grumble—on the contrary, they were much elated.—Faithfully yours, H. S. ELPHICK.

4 Eslington Terrace, Newcastle-upon-Tyne,
June 17th, 1923.

Paralysis of the Seventh Nerve in Cattle. Bell's Palsy. Spewing the Cud.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Mr. Harvey, in his article on the above subject, refers to my contribution to the *Veterinary Journal* as one with an "unfortunate heading."

I did not invent the term, but took it from Hoare's *System of Veterinary Medicine*, in which (page 343) spewing of the cud is stated to be "usually due to diseased teeth, acute stomatitis, glossitis, or actinomycotic invasion of the jaws, mouth or tongue, etc."

It was to combat this view of the etiology of the condition that I sent the contribution to the *Veterinary Journal* for November, 1921. I therein stated that, in a case recently observed, "the left ear drooped and the left eye appeared to be smaller, more covered by the eyelids, than the right," and that the malady was due to injury to the seventh cranial nerve and consequent paralysis of the cheek; "not a question of vomiting or of dropping the cud out of the mouth from pain, but from sheer inability to retain the half-fluid mass in the mouth."

I am perhaps unfortunate in being little of a purist, in the nomenclature of diseases in our animals; so long as the term conveys to the reader the condition to be indicated, I can be satisfied—like Mercutio's wound, "'twill serve." The term "spew" is, it must be admitted, not an elegant one, though old and with Biblical sanction. The lukewarm Laodiceans were told "since you are neither cold nor hot, I will spew you out of my mouth"; and, after all, I do not know that Bell's Palsy improves matters much. Do not doctors talk of whooping cough, mumps, chicken pox, and a hundred other popular terms in reference to the maladies of their patients? I do not understand the relativity of the last paragraph in Mr. Harvey's paper. If it has reference to the case of the foal mentioned in my contribution to the *Veterinary Journal*, I can only say that the knacker's chain had nothing to do with the fracture of the atlas, as I removed the piece of bone from the animal *intra vitam*.—Yours faithfully, W. R. DAVIS, M.R.C.V.S.

Enfield,
June 23rd, 1923.

Forthcoming Conference of Veterinary Inspectors.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—For the information of your readers who are desirous of making arrangements to attend the Conference of Veterinary Inspectors at the Royal Sanitary Institute's forthcoming Congress in Hull, I beg to furnish you with the programme of papers and discussions, etc. It is as follows:—

WEDNESDAY, AUGUST 1ST.

CONFERENCE OF VETERINARY INSPECTORS to be held in the School of Art, 10 a.m. to 2 p.m.

President:—Professor O. Charnock Bradley, M.D., D.Sc., Ch.B., M.R.C.V.S.

Vice-Presidents:—Major Joseph Abson, D.S.O., T.D., F.R.C.V.S.; R. J. Hick, F.R.C.V.S.; Gerald Leighton, O.B.E., M.D., F.R.S.E.; J. S. Lloyd, F.R.C.V.S.; W. Longhurst, M.R.C.V.S.; T. Parker, F.R.C.V.S.

Hon. Local Secretaries:—A. J. Hines, M.R.C.V.S.; A. P. Lewis, M.R.C.V.S.

Recording Secretary:—James R. Hayhurst, M.R.C.V.S., D.V.S.M. (Viet.).

1. Address by the President.
2. A paper on "Meat Poisoning," by A. Gofton, F.R.C.V.S., Chief Veterinary Inspector, Edinburgh. Discussion to be opened by T. Parker, F.R.C.V.S., Veterinary Inspector, Newcastle-on-Tyne.

THURSDAY, AUGUST 2ND.

3. A paper on "The Spread of Tuberculosis amongst Animals," by J. D. Whitehead, F.R.C.V.S., D.V.S.M. (Viet.), Veterinary Inspector, Salford. Discussion to be opened by A. M. Trotter, M.R.C.V.S., Chief Veterinary Inspector, Glasgow.
4. A paper on "The Disposal of Diseased Carcases," by R. Simpson, F.R.C.V.S., D.V.S.M., Veterinary Inspector, Ministry of Agriculture.

Yours faithfully, JAMES R. HAYHURST.

Metropolitan Cattle Market, Islington,
June 22nd, 1923.

Tuberculosis in Swine.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Referring to a letter from Capt. R. Finch, F.R.C.V.S., D.V.S.M., under the heading of "Tubercular Disease in Swine," which appeared in your issue of the 16th inst., my attention was especially attracted to one sentence therein, reading as follows:—"It has been brought to my attention recently," says Capt. Finch, "that avian tuberculosis may be a possible and frequent source of infection to swine. No doubt," he continues, "suitable proof of this can be established by laboratory investigations in the fact of finding the avian type of tubercle bacillus in the infected glands of swine."

It is, I think, already recognised that swine may contract infection with the avian type of T.B., and that they suffer from the localised form of the disease when infected with this particular type of the tubercle bacillus.

Dr. Cobbett, lecturer in Pathology at Cambridge University, delivered a lecture relating to this subject at the Royal Institute of Public Health, some time ago, and if Capt. Finch has not already seen a report or abstract of this lecture, he would no doubt find it of interest in connection with the subject mentioned in his letter. The following paragraph, quoted from the above-mentioned lecture, is perhaps of especial interest in this connection:—"The pig is of exceptional interest. It is the only one of the large domesticated mammals clearly shown to be susceptible to infection by all three types of tubercle bacilli. Its susceptibility to the types other than the bovine is, however, low, for in all cases found so far to be caused by bacilli of avian or human type the disease has been strictly limited to the submaxillary lymphatic gland. This raises the question why this gland is susceptible beyond that of the other cervical lymphatic glands of the pig. It may be that the portal of entry in these cases of localised tuberculosis is the teeth of the lower jaw, and it

is an interesting point in this connection that the pig is said . . . to be almost the only domesticated mammal that suffers at all commonly from dental caries."

The lecturer mentioned that tubercle bacilli of human type alone had been found in the pig four times and those of avian type alone forty-eight times.

The subject is decidedly interesting. As to whether the pig is a frequent subject of dental caries, and whether the frequency of submaxillary lymph gland infection in these animals can be thereby explained, is, one would imagine, a matter in regard to which some of those veterinary inspectors who regularly examine carcases of swine should be able to throw some light.—Yours truly,

Edinburgh, W. JOWETT.
25th June, 1923.

Royal (Dick) Veterinary College Centenary.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—The Duke of Atholl, K.T., has consented to be President of the Centenary Celebrations.—Yours faithfully,

O. CHARNOCK BRADLEY.

Royal (Dick) Veterinary College, Edinburgh,
30th June, 1923.

A Disclaimer.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—On page 430 of your issue of June 16th, I am reported as having expressed the opinion, at the Eastern Counties Division meeting at Ipswich, that the National existed for *gingering up the Council of the R.C.V.S.* I am sure the worthy wielder of the blue pencil on the reports of this division will forgive my pointing out that he, under the stress of his already fully occupied time, has, in rendering the report, imputed to me words that were used by another.

I do not hold the view that *gingering up the Council of the R.C.V.S.* is even a minor function of the National.—Yours faithfully, E. BRAYLEY REYNOLDS.

March House, Newmarket,
June 26th, 1923.

[This was not the doing of the knight of the blue pencil, the report having been published as received.—ED

An Important Question.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Although this is not a veterinary matter, it is of much importance to veterinarians at the present time. With regard to the new assessments on property, whose place is it to appeal against them? Is it the landlord's or the tenant's business to appeal? If it is the landlord's duty to do so, why are the assessment notices being sent out to the tenant?—Yours truly,

ENQUIRER.

[The authorities are not, in every case, aware of the name of the landlord, the tenant's name only appearing on the register.—ED.]

The Editor begs to acknowledge the receipt of the following:—

Report of the Central Division, from Capt. J. S. Macdonald, Hon. Secretary.

Report of the Derbyshire Division, from Mr. E. Marrison, Hon. Secretary.

Report of the Chief Veterinary Surgeon, Southern Rhodesia.

R.D. (Woolwich) Report, No. 56.

Clinical cases from Mr. A. E. Beaumont.

Communications from Major W. C. Quinnell, Major P. J. Simpson, Capt. Eustace Montgomery, Messrs. F. Whitehouse, H. J. Allen, Capt. H. S. Elphick, and Mr. J. W. Rider.

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange.* Outbreaks reported by the Local Authorities.	Parasitic Mange.* Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.													
Week ended 23rd June, 1923 ...	..	...	10	17	1	55	1	1	9	11	8	50	11
Corresponding Week in 1922	...	...	8	19	8	480	...	...	22	31	1	31	15
Corresponding Week in 1921	...	...	4	7	...	...	...	...	35	44	2	28	10
Corresponding Week in 1920	...	...	6	6	7	824	...	...	49	78		44	23
Total for 25 weeks, 1923 ..	...	...	387	440	8	326	2	2	514	778	342	1000	401
Corresponding period in 1922	1	...	286	328	1121	54685	...	...	733	1078	386	617	229
Corresponding period in 1921	21	1	283	342	41	2888	5	11	1465	2262	384	654	197
Corresponding period in 1920	4	...	221	256	60	7645	9	16	2602	4455	283	1148	441

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND.												
Week ended 23rd June, 1923	...	...	...	...	...	...	Outbreaks 2	3	2	12		
Corresponding Week in 1922 ...	...	...	...	...	...	...	3	1	5	23		
Corresponding Week in 1921 ...	...	...	...	5	...	...	2	1	...	5		
Corresponding Week in 1920 ...	...	...	...	...	...	..	3	1	1	4		
Total for 25 weeks, 1923	...	...	...	...	..	...	54	66	77	595		
Corresponding period in 1922 ...	1	1	...	...	...	...	64	126	145	806		
Corresponding period in 1921 ...	...	...	7	77	...	...	48	137	36	227		
Corresponding period in 1920 ...	1	1	...	...	1	3	73	150	6	22		

NOTE.—The figures for the current year are approximate only.

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